What is claimed is:

[Claim 1] 1. An arrangement for manufacturing a composite layer structure from at least one first and at least one second cover sheet (1, 2) between which a core sheet (30) is provided that comprises a composition of fibers (9) and adhesive (5), said arrangement comprising:

a first unit (4, 7; 8) for generating the core sheet (30) which comprises at least one first and at least one second device (4, 7) for applying the adhesive (5) onto the at least one first and the at least one second cover sheet (1; 2) and at least one flocking device (8) for applying the fibers (9) onto areas of at least one of the cover sheets (1, 2) which are coated with the adhesive (5);

wherein locally varying physical properties of the composite layer structure can be achieved by providing the first and/or the second device (4, 7) for locally applying the adhesive (5) onto predetermined areas of the cover sheets (1; 2) and/or by providing the flocking device (8) for applying the fibers (9) with varying kind and/or density and/or thickness and/or length and/or material and/or orientation relative to the cover sheets; and

at least one second unit (12) for joining together the cover sheets (1, 2).

[Claim 2] 2. An arrangement for the manufacture of a composite layer structure from at least one first and at least one second cover sheet (1, 2) between which a core sheet (30) is provided which comprises a composition of fibers (9) and adhesive (5), said arrangement comprising:

a first unit (4, 7; 8) for generating the core sheet (30) which is provided for applying a mixture of fibers (9) and adhesive (5) onto at least one of the cover sheets (1; 2);

wherein locally varying physical properties of the composite layer structure can be achieved by providing the first unit (4, 7; 8) for locally applying the mixture onto predetermined areas of the cover sheets (1; 2); and

at least one second unit (12) for joining together the cover sheets (1, 2).

[Claim 3] 3. The arrangement as recited in either of claims 1 or 2, wherein at least one of the devices (4, 7) for applying the adhesive (5) and for applying the mixture of fibers (9) and adhesive (5), respectively, comprises a sieve (47, 77) which is at least partly permeable for the adhesive (5) and the mixture of fibers (9) and adhesive (5), respectively, through which the adhesive (5) and the mixture of fibers (9) and adhesive (5), respectively, can be applied onto 4t least one of the cover sheets (1, 2).

[Claim 4] 4. The arrangement as recited in claim 3, wherein the sieve is provided in the form of belt (41) which is guided by means of a plurality of rolls (42, 43, 44), wherein a portion of the belt rests on the cover sheet (1, 2) and is carried with it by the conveyance of the cover sheet.

[Claim 5] 5. The arrangement as recited in either of claims 1 or 2, wherein at least one of the devices (4, 7) for applying the adhesive (5) and the mixture of fibers (9) and adhesive (5), respectively, is provided by a spray system comprising a plurality of spray nozzles which can be activated and/or waved.

[Claim 6] 6. The arrangement as recited in claim 1, wherein the flocking device (8) comprises at least one vessel (81) having a bottom which is permeable for the fibers (9), and at least one vibrating device with which the at least one vessel (81) is subjected to a vibration in order to increase or modulate the amount of fibers (9) penetrating through the bottom.

[Claim 7] 7. The arrangement as recited in claim 1, wherein the flocking device (8) comprises at least one vessel (81) having a bottom which is permeable for the fibers (9) and at least one device for generating an electric and/or magnetic field (82) between the at least one vessel (81) and the at least one first cover sheet (1), so that the fibers (9) penetrating through the bottom are accelerated in the direction of the at least one first cover sheet (1) wherein the strengths of the electric and/or magnetic field (82) can be varied in order to vary or modulate the amount of fibers (9) impacting onto the at least one first cover sheet (1).

[Claim 8] 8. A method for manufacturing a composite layer structure from at least one first and at least one second cover sheet (1, 2) between which a core sheet (30) is provided which comprises a composition of fibers (9) and adhesive (5), especially with an arrangement according to one of the preceding claims, characterized in the following steps:

(al) applying the adhesive (5) onto the at least one first a ad the at least one second cover sheet (1; 2);

(b1) applying the fibers (9) onto areas coated with the adhesive (5) of at least one of' the cover sheets (1, 2), wherein locally varying physical properties of the composite layer structure can be achieved by applying the adhesive (5) onto predetermined areas of the cover sheets (1; 2) and/or by applying the fibers (9) with varying kind and/or density and/or thickness and/or length and/or material and/or orientation relative to the cover sheets; and

(c1) joining together the cover sheets (1, 2).

[Claim 9] 9. A method for manufacturing a composite layer structure from at least one first and at least one second cover sheet (1, 2) between which a core sheet (30) is provided which comprises a composition of fibers (9) a rid adhesive (5), especially with an

arrangement according to one of the preceding claims, characterized in the following steps:

(a2) applying a mixture of fibers (9) and adhesive (5) onto at least one of the cover sheet (1, 2), wherein locally varying physical properties of the composite layer structure can be achieved by locally applying the mixture onto predetermined areas of the cover sheets (1; 2); and (b2) joining together the cover sheets (1, 2).

[Claim 10] 10. The method as recited in either of claims 8 or 9, wherein the steps (al) and (a2), respectively, are executed with a screen printing like method.

[Claim 11] 11. The method as recited in either of claims 8 or 9, wherein the adhesive (5) and the mixture of fibers (9) and adhesive (5), respectively, is applied by spraying.

[Claim 12] 12. The method as recited in either of claims 8 or 9, wherein the adhesive (5) is foaming and is applied substantially in the form of dots.

[Claim 13] 13. The method as recited in either of claims 8 or 9, wherein the adhesive (5) and the mixture of fibers (9) and adhesive (5), respectively, is applied in a non continuous layer, in order to at least substantially avoid inherent stresses due to different thermal expansion coefficients of the cover sheets (1, 2).

[Claim 14] 14. The method as recited in either of claims 8 or 9, wherein the steps (al) and/or (b1) and (a2), respectively, are executed such that the composite layer structure remains free of

adhesive (5) and/or fibers (9) and of the mixture of fibers (9) and adhesive (5), respectively, at least in an area in which it is machined by welding, cutting, buckling, bending or in a similar way.

[Claim 15] 15. The method as recited in either of claims 8 or 9, wherein the steps (a1) and/or (b1) and (a2), respectively, are executed such that areas are delimited by the adhesive (5) and the fibers (9) and the mixture of fibers (9) and adhesive (5), respectively, between the cover sheets (1, 2) which are suitable for guiding a liquid or gaseous medium or for containing objects.

[Claim 16] 16. The method as recited in claim 15, wherein the liquid or gaseous media or the object is introduced in said areas after executing steps (a1) and/or (b1) and (a2), respectively, and before or after curing the adhesive (5).

[Claim 17] 17. The method as recited in either of claims 8 or 9, wherein before applying the fibers (9) the adhesive (5) is given a viscosity by heating which is suitable for the penetration of the fibers (9).

[Claim 18] 18. The method as recited in either of claims 8 or 9, wherein a mixture of metallic and non-metallic fibers (9) is applied in order to achieve a desired electrical conductivity between the cover sheets (1, 2).

[Claim 19] 19. The method as recited in either of claims 8 or 9, wherein the fibers (9) are applied in the form of a positive/negative pattern onto the cover sheets (1, 2).

[Claim 20] 20. The method as recited in either of claims 8 or 9, wherein during or immediately after applying the fibers (9) a steady or swirled stream of air is directed onto the fibers (9) in order to obtain a non perpendicular and inordinate orientation of the fibers (9).

[Claim 21] 21. The method as recited in either of claims 8 or 9, wherein for curing the adhesive (5) and the mixture of fibers (9) and adhesive (5), respectively, at least two steps are provided which serve for pre-curing and final curing.

[Claim 22] 22. The method as recited in either of claims 8 or 9, wherein the fibers (9) are deposited on a carrier (91), that the carrier is put onto at least one cover sheet (1; 2) and that the fibers (9) are then adhered to the at least one cover sheet (1; 2).

[Claim 23] 23. The method as recited in claim 22, wherein the carrier (91) is removed after adhering the fibers at one of the cover sheets (1, 2).